BY ORDER OT THE COMMANDER,
374TH AIRLIFT WING

374 AW INSTRUCTION 21-105

21 JANUARY 2003

Maintenance

CORROSION CONTROL AND WASHRACK

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction implements Air Force Policy Directive (AFPD) 21-1, *Managing Aerospace Equipment Maintenanc*e, and AF Instruction (AFI) 21-105, *Aerospace Equipment Structural Maintenance*, AFI 21-105/Pacific Air Forces (PACAF) Supplement 1, *Aerospace Equipment Structural Maintenance.* This instruction establishes 374th Airlift Wing (374 AW) requirements, and policies for aircraft and support equipment corrosion prevention programs. This instruction applies to all 374 AW aircraft maintenance functions.

SUMMARY OF REVISIONS

This document is substantially revised and must be completely reviewed.

1. Philosophy:

1.1. Corrosion has a direct impact on the readiness of AF systems. It must be prevented, identified and repaired as prudently as possible.

1.2. Corrosion minimization on AF aircraft and ground equipment is the direct responsibility of all users and maintainers. Due consideration must be given to corrosion prevention during all planning, operation, and maintenance actions.

1.3. The 374 AW Corrosion program is oriented towards prevention. This is accomplished through equipment cleaning, maintenance of protective coatings, and early detection and treatment of corrosion. Strict adherence to corrosion prevention policies and technical orders is essential.

1.4. All maintenance and operations personnel, regardless of Air Force Specialty Code (AFSC), are responsible to document potentially corroded structures/components in the proper maintenance forms.

The Aircraft Structural Maintenance (ASM) element evaluates corrosion discrepancies to determine proper treatment or repair.

1.5. It is not economically feasible to remove corrosion from common hardware (screws, nuts, etc.), therefore, replace corroded hardware as necessary in accordance with (IAW) applicable technical order (T.O.) or instruction.

1.6. Substances such as soft drinks, household cleaning detergents, and other commonly available chemicals, must be properly cleaned if spilled in or on aircraft metal components. Common sense and prudent cleaning/rinsing are critical elements of the corrosion prevention program.

1.7. Never clean aircraft metal components with unapproved cleansers. Some commonly procured cleansers, such as General Purpose Cleaner (GPC) are highly corrosive to aluminum.

2. ASM Element Responsibilities:

2.1. The 374th Maintenance Squadron ASM Element (374MXS/MXMFS) Superintendent is designated as the 374 AW Corrosion Program Manager.

2.2. Ensure that only properly trained personnel operate shop corrosion prevention equipment.

2.3. Ensure 2A7X3 technicians receive adequate training (formal and on-the-job) to accomplish assigned tasks.

2.4. Manages the 374 MXS aircraft wash facility, Refurbishment hangar and paint booths.

3. ASM Wash Rack Facility Manager Responsibilities:

3.1. Ensures fall protection lifeline cables are installed when required and properly maintained.

3.2. Ensures cleaners and equipment are procured, available and properly used, to include proper mix ratio IAW applicable T.O. or instruction.

3.3. Reviews the *Qualified Products List (QPL)* for Aircraft Washing at least every six months at **https://www.afcpo.com/mil/index.html**.

3.4. Ensures wash rack facility and surrounding area are kept clean and properly maintained.

3.5. Maintains all wash rack equipment required to complete an aircraft wash in serviceable condition.

3.6. Ensures all personal protective equipment (PPE) is maintained and readily available for owning activity aircraft wash crews.

3.7. Informs aircraft wash crews that only authorized aircraft cleaners and products are to be used during aircraft cleaning operations.

3.8. Ensures the wash facility is kept serviceable by calling in work orders for repairs immediately when discovered.

4. Aircraft Owning Activity Responsibilities:

4.1. Will appoint a qualified Aircraft Wash Supervisor for each wash.

4.2. Coordinate and schedule use of the wash rack facility through the 374th Maintenance Operations Squadron Plans, Scheduling and Documentation (374 MOS/MXOOP) for aircraft washes.

4.3. Any special or out of cycle washes not scheduled through 374 MOS/MXOOP will be coordinated through the ASM Superintendent or designated representative.

4.4. Provides qualified aircraft wash crews.

4.5. Performs washing and cleaning of assigned weapon systems.

4.6. Ensures a cleanliness inspection of aircraft is accomplished after completion of the aircraft wash. An owning work center supervisor (production superintendent or dock chief, as appropriate) will sign-off the cleanliness inspection. The key is to have supervisory personnel or production inspectors that did not participate in the wash perform the cleanliness inspection.

NOTE: Definition of clean: All references to the condition of "clean" pertain to the following description: To determine if surfaces are clean, a close visual inspection is accomplished to determine that all residue, oily film and streaking have been removed.

4.7. The isochronal/phase inspection dock supervisor may accomplish the cleanliness inspection for isochronal/phase aircraft washes only.

5. Wash Crew Supervisor Responsibilities:

5.1. Provides and documents safety briefings to wash crew members explaining hazards associated with wash rack operations.

5.2. Ensures aircraft wash crews are task trained and qualified IAW paragraph **8.** of this instruction.

5.3. Ensures proper safety equipment and PPE are serviceable and properly used IAW applicable T.O. or instruction.

5.4. Ensures only cleaners provided by the ASM element or wash rack facility manager are used to complete aircraft washes.

5.5. Ensures all documentation is accomplished IAW paragraph **6.** of this Instruction and T.O. 00-20-5, *Aerospace Vehicle/Equipment Inspection and Documentation*.

5.6. The wash supervisor ensures the facility and equipment are cleaned and properly stored upon completion of each wash and Foreign Object Debris (FOD) control procedures are followed IAW paragraph **11.** of this instruction.

5.6.1. Reports facility and equipment malfunctions to ASM element or wash rack facility manager immediately.

5.7. Ensures Composite Tool Kit (CTK) procedures are followed and scrub pads are controlled in the same manner as rags IAW PACAFI 21-101, *Objective Wing Aircraft Maintenance*, and PACAFI 21-101/374 AW Supplement 1, *Objective Wing Aircraft Maintenance*.

6. Cleaning and Aircraft Wash Documentation:

6.1. A complete exterior and interior cleaning will be accomplished on all aircraft as directed by T.O. 1-1-691, *Aircraft Weapons Systems Cleaning and Corrosion Control*, and weapon system-specific technical data. This will be accomplished during scheduled wash cycles, before isochronal or phase inspections and prior to refurbishments.

6.2. The following form entries, as a minimum, are required for an aircraft wash:

6.2.1. "Aircraft wash required." Enter this in the forms on a red dash. It is cleared by the aircraft owning unit wash supervisor.

6.2.2. "Aircraft taped and prepped for wash." Enter this in the forms on a red X prior to the wash. It is cleared by the appropriate inspector after the aircraft has been de-taped, all associated equipment, such as wheel covers and related tasks are accomplished and the cleanliness inspection has been completed and signed-off.

6.2.3. "Aircraft post-wash cleanliness inspection due." Enter this in the forms on a red dash prior to the wash. It is cleared by the owning unit maintenance supervisor, production supervisor, or authorized contractor after completion of the cleanliness inspection.

NOTE: Definition of clean: All references to the condition of "clean" pertain to the following description: To determine if surfaces are clean, a close visual inspection is accomplished to determine that all residue, oily film and streaking have been removed.

6.2.4. "Aircraft post-wash lubrication due."

6.3. Proper post-wash lubrication is vital in prevention of corrosion. Lubrication prevents water intrusion in bearing cavities and subsequent corrosion damage. If technicians wash components between normal cleaning cycles (flight line or "spot" washes), re-lubrication of the affected components is required.

7. Quality Assurance Responsibilities:

7.1. All Evaluations will be accomplished IAW the 374 AW Quality Assurance Program (QAP), applicable T.O. and safety instruction.

7.1.1. Evaluate aircraft and Aerospace Ground Equipment (AGE) washes for compliance.

7.1.2. Evaluate the quality of isochronal corrosion inspections.

7.2. Periodically review wash rack cleaning agents for QPL compliance.

7.3. Ensure PPE is properly utilized.

8. Corrosion Prevention and Control/ Aircraft wash training:

8.1. All aircraft maintenance personnel will receive initial corrosion prevention and identification training, and refresher training every year thereafter. The initial and refresher training will include a combination of on the job training (OJT) and computer-based training (CBT)/video on Aerospace Corrosion Prevention and Control. All personnel involved with aircraft washing will also require OJT and aircraft wash CBT (2A7X3 personnel are exempt from periodic corrosion familiarization training).

8.2. The Maintenance Operations Training Flight or unit maintenance-training manager procures and ensures currency and administration of the CBT and video Training courses IAW PACAFI 21-101, chapter 9.

9. Protective Coating Maintenance:

9.1. Maintenance painting is defined as the application of coatings to aerospace equipment where the existing coating system is deteriorated or missing. Maintenance painting must be kept to a minimum

and must comply with federal and local environmental regulations. Maintenance painting of aircraft accomplished solely for cosmetics is highly discouraged because of environmental and coating thickness restrictions.

9.2. The 374 MXS ASM element will determine priority for maintenance painting by scoring all aircraft coating systems IAW T.O. 1-1-8, *Application and Removal of Organic Coatings, Aerospace and Non-Aerospace Equipment*, paragraph 9.2.

9.3. Paint cure times are critical to the effectiveness of the final coating. T.O. cure times will be allowed to expire before painted components are put in service.

9.4. Complete over coating of AGE/support equipment may be accomplished only when the existing protective coating has deteriorated beyond 60%. Maintenance painting of deteriorated areas will be done to prevent or repair corrosion.

9.5. Non Critical corrosion control tasking (painting of FOD cans, desks, signs etc.) will be kept to an absolute minimum.

10. Corrosive Chemical Contamination Guidance:

10.1. When a chemical leak or spill occurs aboard 374 AW aircraft, follow established guidance for reporting and clean up.

10.1.1. After neutralization, the first maintenance person on the scene will immediately annotate the aircraft forms with type of chemical (if known) and contamination area. Immediately notify the Aircraft Structural Maintenance Element to perform a comprehensive corrosion inspection of the affected area.

10.2. Thoroughly clean aircraft and equipment contaminated with fire extinguishing materials as soon as possible after exposure IAW T.O. 1-1-691.

11. FOD Control on the ASM Wash Rack Facility and PAD:

11.1. Wash Crew Supervisor will inspect and sign out the wash rack and pad before beginning an aircraft wash on a PACAF Form 140, **CTK Inventory Inspection Log (Version 2),** (a separate PACAF 140 is maintained for the Composite Tool Kit and break room). This indicates acceptance of the condition of the Wash Rack Pad for the duration of the wash.

11.2. The Wash Crew will perform a FOD walk before the aircraft is towed on to the wash pad and immediately after the aircraft is towed off the pad, IAW PACAFI 21-101 and PACAFI 21-101/374 AW Supplement 1.

11.3. The Wash Crew Supervisor or designated Owning Squadron representative will need to contact the ASM element to set a time after removal of the aircraft to inspect and turn in the Wash Rack and pad during daylight hours no later than 1200 hrs (may be the following day if the aircraft is moved at night).

11.3.1. The Wash Crew Supervisor or designated owning squadron representative and ASM personnel or 374 MXS Production Supervisor (Maintenance 10) inspect the Wash Rack Pad for FOD, Soap and lubrication residue. After the Wash Rack Pad has passed inspection, the in block of the PACAF Form 140 for the Wash Rack Pad will be signed by the ASM personnel or Maintenance 10, releasing the Wash Crew Supervisor from responsibility of the Wash Rack Pad.

11.3.2. Every Tuesday, no later than 1200 hrs (except when a wash is in progress), the Aircraft Structural Maintenance Element will perform a FOD walk IAW PACAFI 21-101 and PACAFI 21-101/374 AW Supplement 1.

MARK E. STEARNS, Colonel, USAF
Commander

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

AFPD 21-1, *Managing Aerospace Equipment Maintenance*

AFPD 91-3, *Occupational Safety and Health*

AFI 21-105 and AFI 21-105/PACAF Supplement 1, *Aerospace Equipment Structural Maintenance*

AFI 48-145, *Occupational Health Program*

AFI 91-202, *The US Air Force Mishap Prevention Program*

AFI 91-301, *Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH) Program*

PACAFI 21-101 and PACAFI 21-101/374 AW Supplement 1, *Objective Wing Aircraft Maintenance*

AFOSH STD 48-8, *Controlling Exposures to Hazardous Materials*

AFOSH STD 48-137, *Respiratory Protection Program*

AFOSH STD 91-17, *Interior Spray Finishing*

AFOSH STD 91-68, *Chemical Safety*

AFOSH STD 91-66, *General Industrial Operations*

AFOSH STD 91-100, *Aircraft Flight Line - Ground Operations and Activities*

T.O. 00-20-2, *Maintenance Data Documentation*

T.O. 00-20-5, *Aerospace Vehicle/Equipment Inspection and Documentation*

T.O. 00-25-172, *Ground Servicing of Aircraft and Static Grounding/Bonding*

T.O. 1-1-8, *Application and Removal of Organic Coatings, Aerospace and Non-Aerospace Equipment*

T.O. 1-1-690, *General Advanced Composite Repair Manual*

T.O. 1-1-691, *Aircraft Weapon Systems Cleaning and Corrosion Control*

T.O. 1C-9A-2-51, *Structures*

T.O. 1C-130A-23, *C-130 Corrosion Control*

T.O. 1C-130A-23CL, *Washing and Cleaning Checklist*

T.O. 31-1-75, *General Maintenance Practices*

T.O. 32-1-101, *Use and Care of Hand Tools and Measuring Tools*

374 AW LCL-12, *C-9A-Aircraft Wash Checklist*

Abbreviations and Acronyms

AFSC—Air Force Specialty Code

AGE—Aerospace Ground Equipment

ASM—Aircraft Structural Maintenance

CBT—Computer-Based Training

CTK—Composite Tool Kit

FOD—Foreign Object Debris

GPC—General Purpose Cleaner

OJT—On the Job Training

PPE—Personal Protective Equipment

QAP—Quality Assurance Program

QPL—Qualified Product List